

REMARKS

Status

Claims 37-69 were at issue in this Office Action. The present amendment cancels claims 47, 48, 57, 58, 60, 61, 64 and 66. Accordingly, it is now claims 37-46, 49-56, 59, 62-63, 65 and 67-69, as amended, which are at issue.

The Office Action

In the Office Action mailed April 7, 2009, claims 37-69 were rejected under 35 U.S.C. §112, second paragraph, with regard to particular informalities noted by the Examiner. No prior art rejections were made.

Applicant thanks the Examiner for the Office Action, for the detailed explanation of the basis of the rejections under 35 U.S.C. §112, second paragraph, and for the indication of allowable subject matter.

The Application is in Condition for Allowance

By the present amendment, Applicant has corrected all of the informalities noted by the Examiner; and accordingly, all such objections are overcome. Applicant will briefly discuss the specifics of the amended claims.

Claim 37:

It is now affirmatively stated that there are three CW mixers and three FM-CW mixers. From Fig. 1b and the discussion given in connection with Fig. 1b, it should be clear that the CW mixers and the FM-CW mixers are functionally separate elements having different outputs.

The noun “receiver” on line 7 has been amended to plural “receivers”.

Furthermore, the wording of the pending claim 37, lines 18-19, “each first FM-CW beat signal ...” is an obvious error and has been amended to the wording “each first, second and third

FM-CW beat signal ...". The basis for this amendment is given in the summary of the invention, page 5, lines 24-25, and lines 31-32.

Claim 38:

The pending claim 38 may be considered to lack clarity by the wording "detecting phase differences between corresponding reflected CW or FM-CW radar signals ...".

From Figs. 6a and 6b and the corresponding discussion given in the description on pages 30 and 31, it should be clear that a phase difference is detected between corresponding reflected CW radar signal and between corresponding reflected FM-CW radar signals. This is outlined in the new amended claim 38.

Claim 39:

The pending claim 39 may also be considered to have the same problem of lack of clarity as discussed for claim 38. Thus, the new claim 39 has been rewritten to overcome this lack of clarity. Basis for this amendment is to found in the pending claim 39 and the discussion given in connection with Figs. 6a and 6b.

Claim 40:

The pending claim 40 may be also be considered to lack clarity by the wording "the phase detecting means are adapted to determine the first phase difference from at least two Fourier transformed outputs representing CW or FM-CW signals ...".

From Figs. 6a and 6b and the corresponding discussion given in the description on pages 30 and 31, it should be clear that a first CW phase difference is determined from Fourier transformed outputs representing CW signals, and that a first FM-CW phase difference is determined from Fourier transformed outputs representing FM-CW signals. A similar discussion can be obtained for the second phase differences. Thus, the new claim 40 has been rewritten to

overcome this lack of clarity. Basis for this amendment is to be found in the pending claim 40 and the discussion given in connection with Figs. 6a and 6b.

Claim 41:

The shorthand “and/or” on line 16 of the pending claim 41 has been amended to “and” in order of clarity. In order to make the remaining parts of claim 41 in line with this “and”, the first paragraph of claim 41 has been amended in line with the amended claim 38, and the second and third paragraphs of claim 41 have been amended in line with the amended claim 39.

Thus, it is to be noticed that the removal of the word “or” from the “and/or” in claim 41 has initiated the amendments of claims 38 and 39, and the similar parts of claim 41.

Claim 42:

In the wording “reflected CW and FM-CW or MF radar signals”, the acronym MF has been removed in order of clarity.

Claim 43:

The wording “beat signal(s)” has been amended to the wording “one or more beat signals” to be in line with the wording used in claim 37 “one or more corresponding first, second and third CW beat signals”, and similarly for the FM-CW signals.

Here, reference is made to the description, page 30, lines 15-20, telling that:

When a single target or object is detected, a single frequency component of the beat signal appears for the CW signal ...
However, when a plurality of objects are detected, beat signal frequency components of a number equal to the number of objects appear for the CW signal

Thus, the number of beat signals depends on the number of detected objects.

Claim 45:

The pending claim 45 is similar to the pending claim 40, and thus the new claim 45 has been rewritten in accordance with the new claim 40.

Claim 46:

The wording “substantially perpendicular” has been amended to “perpendicular”.

Claim 50:

The wording “beat signal(s)” has been amended to the wording “one or more beat signals” to be in line with the wording used in claim 37. See also the discussion given to the new claim 43.

The shorthand “and/or” has been amended to the word “and”.

Claim 51:

- In the wording “reflected CW and FM-CW or MF radar signals”, the acronym MF has been removed in order of clarity.

The wording “beat signal(s)” has been amended to the wording “one or more beat signals” to be in line with the wording used in claims 37 and 50. See also the discussion given to the new claim 43.

Claim 52:

In the wording “reflected CW and FM-CW or MF radar signals”, the acronym MF has been removed in order of clarity.

The wording “beat signal(s)” has been amended to the wording “one or more beat signals” to be in line with the wording used in claim 37. See also the discussion given to the new claim 43.

The shorthand “and/or” has been amended to the word “and”.

Furthermore, the 7th paragraph of claim 52 has been amended in line with the new claim 38.

Claim 63:

The shorthand “and/or” has been amended to the word “and”.

Claim 67:

It is stated that there are three CW mixers and three FM-CW mixers. The noun “receiver” on line 8 has been amended to plural “receivers”.

Furthermore, the wording of the pending claim 67, lines 13-14, “each first FM-CW beat signal” is an obvious error and has been amended to the wording “each first, second and third FM-CW beat signal”.

The basis for the above amendments is discussed for the new claim 37.

The shorthand “and/or” has been amended to the word “and”.

In order to make the remaining parts of claim 67 in line with this “and”, the 6th paragraph of claim 67 has been amended in line with the amended claim 38, and the 7th and 8th paragraphs of claim 67 have been amended in line with the amended claim 39.

Claim 68:

It is stated that there are three CW mixers and three FM-CW mixers. The noun “receiver” on line 8 has been amended to plural “receivers”.

Furthermore, the wording of the pending claim 68, lines 13-14, “each first FM-CW beat signal” is an obvious error and has been amended to the wording “each first, second and third FM-CW beat signal”.

The basis for the above amendments is discussed for the new claim 37.

The shorthand “and/or” has been amended to the word “and”.

The wording “beat signal(s)” has been amended to the wording “one or more beat signals” to be in line with the wording used in the first part of the claim. See also the discussion given to the new claim 43.

Claim 69:

It is stated that there are four CW mixers and four FM-CW mixers. Furthermore, the wording of the pending claim 69, line 14, “each first FM-CW beat signal” is an obvious error and has been amended to the wording “each first, second, third and fourth FM-CW beat signal”.

The basis for the above amendments is discussed for the new claim 37.

The shorthand “and/or” has been amended to the word “and”.

In order to make the remaining parts of claim 69 in line with this “and”, the 8th paragraph of claim 69 has been amended in line with the amended claim 38.

The wording “beat signal(s)” has been amended to the wording “one or more beat signals” to be in line with the wording used in the first part of the claim. See also the discussion given to the new claim 43.

The foregoing amendments address all of the objections raised by the Examiner. In view thereof, all objections are overcome and the application is in condition for allowance.

Conclusion

In view of the foregoing amendment and remarks, Applicant respectfully submits that all rejections are overcome and the application is in condition for allowance. Any questions, comments, or suggestions which the Examiner may have which will place the application in still better condition for allowance should be directed to the undersigned attorney.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 07-1180.

Dated:

Respectfully submitted,

By R. Citkowski

Ronald W. Citkowski

Registration No.: 31,005

GIFFORD, KRASS, SPRINKLE, ANDERSON
& CITKOWSKI, P.C.

2701 Troy Center Drive, Suite 330

Post Office Box 7021

Troy, Michigan 48007-7021

(248) 647-6000

(248) 647-5210 (Fax)

Attorney for Applicant